ISD Checklist

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Approved By: (signature)
Name: Joe Hennessy
Title: Chief, ISD

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Software Contents of the Mission-Level Preliminary Design Review (PDR)

Use this checklist to ensure that key elements of the software preliminary design, management process, and status are presented for review as part of the System (Mission-Level) PDR. Structure the presentation at a high level so that this material can be covered in about 1 hour.

- ❑ **Software-related Requests for Action (RFAs) and responses** from the Code 300 System Concept Review (SCR) or System Requirements Review (SRR)
- ❑ **Requirements summary –** High-level review and update of software requirements
  - ❑ Overview of requirements documents
  - ❑ Requirements for reuse of existing software
  - ❑ Unique requirements
  - ❑ ICD status and key interface issues
  - ❑ Safety and security requirements
- ❑ **Operational scenarios**
  - ❑ Normal/nominal operations scenarios
  - ❑ Fault detection, isolation, and recovery (FDIR) strategy and scenarios
  - ❑ Safety hazard reduction strategies (if applicable)
- ❑ **High-level design –** At a minimum, include the following:
  - ❑ Software architecture, external interfaces and end-to-end data flow
  - ❑ Design drivers (e.g., performance, reliability, hardware considerations)
  - ❑ Analyses of design alternatives, including reuse and/or COTS tradeoffs
  - ❑ Results from Preliminary Hazard Analysis as it relates to software safety-critical elements (if applicable)
  - ❑ Block diagram of software architecture
  - ❑ Mapping of system-level and derived requirements to subsystems or CSCIs, highlighting safety-critical requirements
  - ❑ For each major component, the component's structure, functional allocations, and internal interfaces
  - ❑ Use Cases for the software system and subsystems
- ❑ **Software Management Plan (SMP) –** Review the following, highlighting changes or additions since SCR/SRR:
  - ❑ Organization/WBS/Project relationship
  - ❑ Software size estimates, budgets, and staffing
  - ❑ Development schedule showing key receivables, deliverables, and dependencies
  - ❑ Requirements management approach and tools
  - ❑ Development approach, including peer review/walkthrough plans
  - ❑ Documentation plan, including when documents are to be baselined
  - ❑ Build/release plan – contents and schedule
  - ❑ Software development and test environments and tools
  - ❑ Test strategy/plan, including test drivers/simulators and test data
  - ❑ Configuration Management, Product Assurance, and Software Safety plans and tools
  - ❑ IT Security strategy for development, integration & test, and operations
  - ❑ Risks and risk management plans
  - ❑ Infusion of previous Lessons Learned; collection of new Lessons Learned
- ❑ **Software status –** Current schedule, milestone, and cost/effort status
- ❑ **Issues, TBDs, and action items**